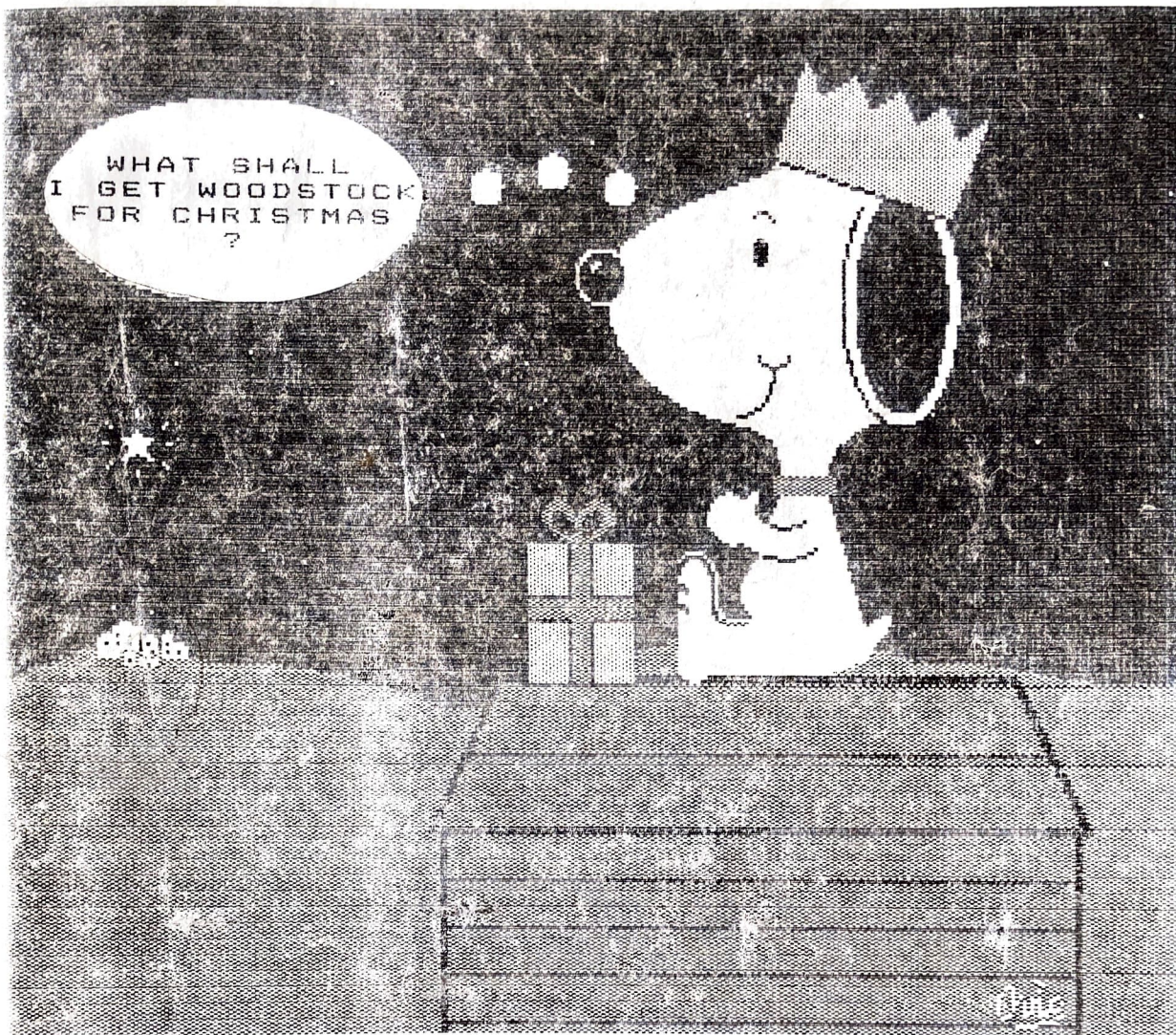




Number 41, November 1986

CONTENTS

Diary	1
Christmas Party	1
User Show	1
Christmas Card Competition	1
Micro Live	2
RISC	2
What's in the Mags?	3
Articles for the newsletter	4
Cover Credits	4

DIARY

The next few meetings will be held on:

3 December
17 December - Christmas Party
7 January 1987
21 January

All meetings are held in the Shakespeare Hotel on Gibraltar Street, near Sheffield city centre.

CHRISTMAS PARTY

Since last year's party was such a success, we have decided to arrange this year's along the same lines. The Shakespeare will provide the food, for a cost of £1.50 per head. If members pay £1 of this, the Club will pay the balance. Can we please have numbers of people who wish to come as soon as possible - preferably at this meeting (19 November), and will members please pay by the next meeting (3 December). Guests and non-members are welcome, but we must ask that they pay the full £1.50.

As I hope those who came last year will agree, the Shakespeare puts on a good spread, which is well worth the money.

USER SHOW

The last User Show of the year was held in London from 7th - 9th November. It was well attended (translation: crowded) on the Saturday when I was there, demonstrating that interest in Acorn machines is still high. There was little new on show, however, and Acorn themselves were not exhibiting. There were the usual bargains to be had for hardware and software, and there was a large crowd around Superior Software's stand, where Repton 3 and Ravenskull were being demonstrated (I think!). Computer Concepts were demonstrating Inter-Word, but there was no sign of Inter-Base or Spellmaster, although there were advanced order forms for the latter (£49.00 incl before 30 November).

One unusual piece of hardware on offer was an optical character reader (OCR), which was being sold for £50, plus another £10 for a lead. This enables good quality typescript to be fed directly into the computer, without the need to re-key. I seem to remember that this device cost several hundred pounds when it was first put on sale a year or two ago.

Dave Brown

CHRISTMAS CARD COMPETITION

The Christmas card competition was won by Chris Bramwell, whose winning design is reproduced on the cover. He won the £3 first prize, and the £2 second prize was awarded to Ian Brown, whose

design will be used on next month's cover. If you would like to have copies of either design for use as Christmas cards, please contact the artists.

MICRO LIVE

You will probably have noticed that the new series of Micro Live is being broadcast at present on BBC2 on Friday evenings at 19:30 (7:30 pm, if you prefer!). Although it has become much less Beeb oriented than it used to be, there are usually a number of Acorn machines in evidence. Demonstrations are often done on a Model B, apparently because they have it wired directly for a camera output, which gives a better result than pointing the camera at a monitor, as they have to do for other machines.

RISC

As you may have noticed, reports have been appearing in recent months about the new RISC chip that Acorn is developing. However you may not know is what a RISC chip is! RISC is an acronym for Reduced Instruction Set Computer. Until recently, the trend amongst chip designers has been to produce ever more complicated microprocessors, adding more and more built-in commands. As chip fabrication techniques improved, it became possible to "hard wire" more instructions into the chip, which made for very fast operation - or did it? When the BBC Micro was introduced, Acorn were criticised for using the "old fashioned" 6502 chip, rather than the more sophisticated Z80. The latter has more op codes and more registers than the 6502, but Acorn proved that the "less powerful" 6502 could still form the basis of a very fast machine.

In 1975, John Cocke, an IBM researcher working in New York, first had the idea that the way to increase computer speed might be by reducing, rather than increasing, the number of built-in operations. This was, at first sight a strange notion, as a complex operation would always run more quickly if the code was contained in a single instruction than if it had to be built up from a number of simpler operations. However, what Cocke and the others developing RISC showed, was that the more instructions that are built into the chip, the longer it takes to perform each instruction, and since about 20% of the instructions were used in about 80% of the operations, adding lots of complex, but infrequently used, instructions had an overall slowing down effect.

Also, the more complex instructions took a number of cycles to complete. If you look at the 6502 instruction set (for example in The Advanced User Guide pp 41 - 100), you will see that all instructions need at least two cycles, and some use far more. BRK takes 7 cycles, as do some INC and DEC operations, and LSR can take 8 cycles under some circumstances. As one would expect, 16 and 32 bit chips contain a number of single cycle operations, but complex operations still take several cycles.

In a true RISC chip, every instruction must "pay its way", that is it must be demonstrated to be frequently used, and every instruction should only take one cycle. A number of companies are working on RISC or RISC-like machines, including Acorn, Hewlett-Packard and (of course) IBM. Acorn's chip, called ARM (Acorn RISC Machine) has 44 instructions (the 6502 has some 56), and runs at 4 million instructions per second (Mips). It has twenty five 32 bit registers, compared with the 6502's four 8 bit ones.

Hewlett-Packard are due to release a range of minicomputers, confusingly named Spectrum, which use a RISC-like architecture, probably costing from £30,000 upwards, but you can by an ARM evaluation system, with 4 Mbytes of ram, based on the Beeb, for only £5,200 (send you cheques to Acorn, not me)!

Dave Brown

WHAT'S IN THE MAGS?

A & B COMPUTING, Dec 1986, Vol 3, #12, 132pp, £1.50

Features & Programs:

History of Tubelink (on Prestel) / Cassette loading / Self Assembly plinth / Master graphics / Networking / Software for infants / Random number program / Tube compatible ADFS menu / Jumpers game

Reviews:

Acorn Cambridge 32016 co-processor / Master cartridges / Communication roms, incl: Terminal, Xterm, Communicator, LUTE & Kermit / Micro Trader / Sherston educational programs / LISP / Musicpen / Printing roms: Printers Angel, Fontaid/ Games, incl Cholo and Stryker's Run

THE MICRO USER, Dec 1986, Vol 4 #10, 172 pp, £1.25

Features & Programs:

Reading DATA / Carry Flag in assembler / Arrays / Constructing a hygrometer / Speech program (no additional chip needed) & an interface to record sound / Four-way scroller program / Flood fill program / Break recover program / "Typical" users / Christmas Box and Santa's Sleigh games / Classroom role for the Compact / Maths tables tester

Reviews:

Brom Plus / ACP's Advanced 1770 DFS / Mini Office spreadsheet / ViewSpell / Watford Video Digitiser / School Admin System / Games, incl: Trivial Pursuit & Repton 3

ACORN USER, Dec 86, #53, 234pp, £1.30 (note the 5p increase)

Features & Programs

Print formatting & fraction printing / Addition and subtraction in assembler / Help with View on the Master / Advice for parents on choosing software / Standard procedures / Castle of Nightmares game / Program to create windows / Personalising the Compact Welcome disc /

Reviews

Movie Maker / Music 5000 / Red Boxes / ACP's Advanced 1770 DFS / Programs to log onto French Videotex (Teletel) / Wordwise Training Pack & Pen-Friend / Centronics GLP II printer / Games, incl: The Price of Magik & Galaforce

Dave Brown

ARTICLES FOR THE NEWSLETTER

One of the primary purposes of the Club is to share members' experiences of all the various aspects of Acorn computing. Most of this takes place by means of discussions at meetings between individual members, but the Newsletter should play an important part. If you have recently acquired some hardware or software that you think other members may be interested in, why not write something about it for the Newsletter? There must be a lot of undocumented expertise accumulated by Master owners, for example. New members will be getting Masters all the time, and publishing tips from experienced users will give them a head start. So how about it? If you don't have the time, inclination or skill to write the article yourself, come and talk to me at meetings, and we'll try and concoct something between us.

If you can write an article, you can either submit it as hard copy, or, preferably, on disc or tape; I can accept articles written on Wordwise, View or Inter-Word, or as spooled files, on 40 or 80 track single density disc or on 300 or 1200 baud tape.

Dave Brown

COVER

This month's cover was designed by Chris Bramwell. If you want to draw a cover or write an article for the Newsletter, please contact Dave Brown or Pete Frith.